FOR ARGUMENT

Supreme Court, U.S.
FILED
DEC 6 1994
OFFICE OF THE CLERK

No. 93-1823

In the

Supreme Court of the United States

October Term, 1994

STATE OF MISSOURI, et al.,
Petitioners,

v.

KALIMA JENKINS, et al.,
Respondents.

On Writ of Certiorari to the United States Court of Appeals for the Eighth Circuit

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BRIEF OF AMICI CURIAE JAMES D. ANDERSON, ET AL., IN SUPPORT OF RESPONDENTS

Kevin J. Hamilton*
Julia L. Parsons
Stephen C. Willey
Elizabeth K. Peck
PERKINS COIE
1201 Third Avenue
Seattle, WA 98101-3099
(206) 583-8888
Attorneys for Amici Curiae
*Counsel of Record

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INTEREST OF AMICI CURIAE

Amici Curiae James D. Anderson, Lascelles F. Anderson, M. Beatriz Arias, James Blackwell, Jomills Henry Braddock, II, Everett Cataldo, Kenneth B. Clark, Robert L. Crain, Marvin Dawkins, Joyce L. Epstein, Reynolds Farley, Ricardo R. Fernandez, Gordon Foster, John Hope Franklin, Adam Gamoran, Carl A. Grant, Bruce R. Hare, Ian M. Harris, Larry Hedges, Jennifer L. Hochschild, Joseph Kahne, Kofi Lomotey, James M. McPartland, Mary Haywood Metz, Thomas K. Minter, Gary Natriello, George W. Noblit, Larry P. Nucci, Jeannie Oakes, John Ogbu, Gary A. Orfield, Thomas F.

Pettigrew, Mary Anne Raywid, James R. Rosenbaum, Juliet Saltman, Julian Samora, Robert Slavin, M. Brewster Smith, Mark A. Smylie, Margaret Beale Spencer, Alma F. Taeuber, Karl Taeuber, Marylee C. Taylor, William Trent, Henry T. Trueba, Oscar Uribe, Jr., William Velez, Meyer Weinberg, Amy Stuart Wells, Franklin D. Wilson, William Julius Wilson, J. Milton Yinger, John Yinger, and Constance M. Yowell[1] are social scientists who have studied extensively in the areas of education, economics, social policy, race relations, racial discrimination, and school desegregation. These amici include social scientists who have spent years, in many cases decades, identifying, researching, and studying the vestiges of segregation in schools throughout the United States and evaluating the remedial programs proposed and implemented to eliminate such vestiges.

This case involves important questions of how a district court should evaluate the success of a desegregation plan and at what point a school district should be deemed "unitary," thereby terminating the State's and school district's obligation to remedy the injuries resulting from more than a century of purposeful segregation.[2] Because of their unique perspective on the history of school segregation and experience in the study and evaluation of desegregation plans implemented to remedy the vestiges of such segregation, these amici respectfully submit this brief in support of respondents on the merits.[3]

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[1]The amici social scientists are more fully described at the end of the Appendix.

[2]*See, e.g., Adams v. United States*, 620 F.2d 1277, 1280 (8th Cir.), *cert. denied*, 449 U.S. 826 (1980).

[3]Pursuant to Rule 37 of the Rules of this Court, the parties have consented to the filing of this brief. Copies of the letters of consent from the parties have been filed with the Clerk of the Court.

SUMMARY OF ARGUMENT

This brief addresses the limited issue of how district courts can measure whether vestiges of segregation in the area of educational quality have been eliminated to the extent practicable. The State argues that the district court can make the unitariness determination in this case by looking only at how much money the State has expended and the amount of time that has passed since a remedy was imposed. This superficial approach is divorced from reality. The passage of time and the amount of resources expended are relevant to this determination and may even bear some predictive relation to the success of a desegregation remedy. Any meaningful measurement of the effectiveness of a remedy for a constitutional violation requires, however, consideration of the degree to which the original injury has been ameliorated. Whether there are vestiges of segregation is a question of fact to be determined by the district court. This determination cannot be guided by some abstract touchstone such as that suggested by the State here. Social science provides tools for measuring whether vestiges of segregation remain. If a factual determination is made that some vestige of the constitutional injury remains, an appropriate remedy must also remain. Equal protection jurisprudence and logic require such an approach.

ARGUMENT

This Court has established clear standards for measuring whether a school district has become unitary, thereby allowing a federal court to withdraw its supervision. *Freeman v. Pitts*, 112 S. Ct. 1430 (1992); *Board of Education v. Dowell*, 498 U.S. 237, 111 S. Ct. 630 (1991). Unitariness is achieved when "'the vestiges of past discrimination [have] been eliminated to the extent practicable.'" *Freeman*, 112 S. Ct. at 1446 (quoting *Dowell*, 498 U.S. at 250). In making such a determination, a court should, among other factors, consider: whether the court

decree has been fully complied with; if partial unitariness is at issue, whether continued judicial control is necessary to achieve compliance in other aspects of the school system; and, most importantly, whether there has been a demonstration of a "good faith commitment to the whole of the court's decree and to those provisions of the law and the constitution that were the predicate for judicial intervention in the first instance." *Freeman*, 112 S. Ct. at 1446.

In the case at hand, as in every case of this type, there must be fact finding regarding unitariness, and it must be performed at the district court level. "Proper resolution of any desegregation case turns on a careful assessment of its facts." *Id.* at 1437 (citing *Green v. School Board*, 391 U.S. 430, 439, 88 S. Ct. 1689 (1968)). Relinquishment of judicial control is only appropriate "where justified by the facts of the case." *Id.* at 1445. The burden of coming forward with facts sufficient to show unitariness is on the defendant. *Id.* at 1447; *United States v. Fordice*, 112 S. Ct. 2727, 2743 (1992) (O'Connor, J., concurring) (it is the defendant's "burden to prove it has undone its prior segregation").

The suggestion that a flat amount of time or money can satisfy the State's obligation must be rejected. "There is no universal answer to complex problems of desegregation; there is obviously no one plan that will do the job in every case. The matter must be assessed in light of the circumstances present and the options available in each instance." *Green*, 391 U.S. at 439. This Court's consistent approach to desegregation remedies has emphasized the importance of shaping a remedy to address specific constitutional injuries. *See, e.g., Milliken v. Bradley* (*"Milliken II"*), 433 U.S. 267, 279-80, 97 S. Ct. 2749 (1977); *Swann v. Board of Education*, 402 U.S. 1, 15, 91 S. Ct. 1267 (1971); *Brown v. Board of Education*, 349 U.S. 294, 300, 75 S. Ct. 757 (1955) (citing *Hecht Co. v. Bowles*, 321 U.S. 321, 329-30, 64 S. Ct. 587 (1944)).

The State has claimed unitary status with respect to a portion of the Kansas City desegregation plan known by the parties as the *"Milliken II* programs." Petitioners' Appendix at A-4, A-11. To support the claim of unitariness, the State asserts that it has followed court orders since the desegregation decree was entered in 1985 and has made significant financial expenditures, but the State has come forward with no evidence that it has eliminated the vestiges of segregation to the extent practicable. *See Id.*; Petitioners' Brief at 2. The State's perspective appears to be that the expenditure of money is both the beginning and ending point in assessing the efficacy of desegregation remedies. The State's extensive focus on the costs of the programs in place in Kansas City presents a vision of remedies measured, and terminated, by mere expense. This is an inherently flawed and incomplete model of appropriate remedies for constitutional injuries. "The transition to a unitary, nonracial system of public education was and is the ultimate end to be brought about." *Green*, 391 U.S. at 436. The suggestion that inputs and expense are the only measures of success of a desegregation program runs counter to logic as well as the requirements of *Freeman* and *Dowell*. Most importantly, it does not address the constitutional injury itself.

Milliken II programs, such as those at issue in this case, are intended to counter the educational impairments caused by segregation and to prepare students and faculty for a desegregated environment. *Milliken II*, 433 U.S. at 283. The success of such educational programs in countering educational impairments and preparing the way for a desegregated environment can be measured. Appendix at A-6-22. Extensive research has been conducted by social scientists and others regarding the assessment of such educational programs. *Id.* Any assessment of the efficacy of the remedies should include an evaluation of a variety of indicators, including student resources, school resources, school processes, student opportunities to learn, and student outcomes. *Id.* at A-22-28.

These indicators, which focus on educational inputs, processes, and outcomes, are standard indicators used in educational policy and desegregation policy analysis.[4] *Id.* at A-26-27.

The determination of whether the vestiges of segregation have been eliminated to the extent practicable should be made recognizing that there may be other unrelated factors that can affect the efficacy of *Milliken II* programs. This recognition can be made without unduly burdening the technical possibility or economic feasibility of the assessment. *Id.* at A-26-28. To a large degree, the effects of unrelated factors can be disentangled by employing standard social science techniques and evaluation methods, thereby allowing a determination of what vestiges of segregation remain. *Id.* The fact that such an analysis may be difficult and complex hardly justifies abandoning the inquiry entirely. Fact finding is often difficult and complex. But that very complexity only counsels care and attention, not abstract standards unrelated to the residual injuries burdening the school children of Kansas City.

Moreover, as this Court has recognized, the process of eliminating segregation and its injurious effects, "root and branch," may take many years. *Green*, 391 U.S. at 435-38; *Raney v. Board of Education*, 391 U.S. 443, 88 S. Ct. 1697 (1968); *Swann*, 402 U.S. at 31-32. In another context involving similar educational impairments, this Court observed that "[r]eading and speech deficiencies cannot be eliminated by judicial fiat; they will require time, patience, and the skill of specially trained teachers." *Milliken II*, 433 U.S. at 290. Social

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[4]Measurement of these five types of indicators is standard practice in both the policy and the research community. Appendix at A-26. The National Center for Education Statistics, many states, and policy analysts and social scientists have devoted substantial time and attention to developing and refining systems of indicators. *Id.*

scientists have come to the same conclusion, finding that the elimination of the effects of segregation may take time. Appendix at A-28-31. The long-term effects of segregation can be remedied only by a long-term and good-faith commitment to desegregation and affirmative remedies. *Id.* at A-28-30. "[A]n integrated school system is no less desirable because it is difficult to achieve, and it is no less a constitutional imperative because that imperative has gone unmet for 38 years." *Freeman*, 112 S. Ct. at 1460 (Blackmun, J., concurring). The passage of time should make the imperative of eliminating the vestiges of segregation more, not less, urgent.

Now is not the time to sound the retreat from this Court's historic commitment to educational equality. "The objective today remains to eliminate from the public schools all vestiges of state-imposed segregation." *Swann*, 402 U.S. at 15. Unless and until the State of Missouri carries its burden of proof that this objective has been met, it cannot be relieved of its constitutional obligations.

CONCLUSION

For the foregoing reasons, this Court should affirm the judgment of the Court of Appeals.

RESPECTFULLY SUBMITTED, this 6th day of December, 1994.

Kevin J. Hamilton*
Julia L. Parsons
Stephen C. Willey
Elizabeth K. Peck
PERKINS COIE
1201 Third Avenue
Seattle, WA 98101-3099
(206) 583-8888
Attorneys for Amici Curiae
*Counsel of Record

APPENDIX:
EDUCATIONAL REMEDIES FOR SCHOOL SEGREGATION: A SOCIAL SCIENCE STATEMENT

December 2, 1994

In the 40 years since *Brown v. Board of Education*, through the steadfast insistence of this Court on equal protection of the laws, systems of government-sanctioned school segregation have slowly been dismantled. Substantial numbers of children across the United States have been given the opportunity to attend desegregated schools, and the effects upon them and their communities have been positive in many ways.[1] Still, while this nation has sought actively to end government-sanctioned segregation, it remains plagued by segregation's vestiges and by the continuing harms that those vestiges inflict on minority children and our communities. The vestiges of school segregation are the instruments and consequences of discriminatory racial separation that linger on after formal segregative activity has ceased.

Since *Brown*, a substantial research base has developed in the social sciences concerning the nature of school segregation and its vestiges and consequent harms. We have a better understanding about the systemic nature of school segregation and the processes of cumulative causation in social

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[1]W.D. Hawley & M.A. Smylie, *The Contribution of School Desegregation to Academic Achievement and Racial Integration*, in P. Katz and D. Taylor (Eds.), ELIMINATING RACISM: PROFILES IN CONTROVERSY (New York: Plenum, 1988); A.S. Wells & R.L. Crain, *Perpetuation Theory and the Long-Term Effects of School Desegregation*, EDUCATIONAL EVALUATION AND POLICY ANALYSIS (in press). See also footnotes throughout this statement.

life.[2] School segregation, housing choice and segregation, and poverty concentrations in urban areas are mutually reinforcing.[3] Segregation and discrimination negatively affect identity, esteem, and motivation, and have deleterious consequences on academic achievement, educational and occupational attainment, and civic participation with respect to the disfavored class of students.[4] Segregation causes intergenerational harms—grandparents' and parents' weak education in segregated schools is passed along to their children

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[2]G. Myrdal, AN AMERICAN DILEMMA (New York: Harper, 1944); W.J. Wilson, THE TRULY DISADVANTAGED: THE INNER CITY, THE UNDERCLASS, AND PUBLIC POLICY (Chicago: University of Chicago Press, 1987); C. Jencks & P.E. Peterson (Eds.), *op. cit.*

[3]D. Pearce, *Deciphering the Dynamics of Segregation: The Role of Schools in the Housing Choice Process*, THE URBAN REVIEW 13(2):85-101 (1981); W.J. Wilson, THE TRULY DISADVANTAGED (Chicago: University of Chicago Press, 1987); D.S. Massey & N.A. Denton, AMERICAN APARTHEID: SEGREGATION AND THE MAKING OF THE UNDERCLASS (Cambridge, Mass.: Harvard University Press, 1993); C. Jencks & P.E. Peterson (Eds.), *op. cit.*

[4]G. Allport, THE NATURE OF PREJUDICE (Reading Mass.: Addison Wesley, 1954); D. Milner, CHILDREN AND RACE (Beverly Hills, Cal.: Sage, 1983); R.L. Crain & C.S. Weisman, DISCRIMINATION, PERSONALITY, AND ACHIEVEMENT (New York: Academic Press, 1972); J.H. Braddock & J.M. McPartland, MORE EVIDENCE ON THE SOCIAL-PSYCHOLOGICAL PROCESSES THAT PERPETUATE MINORITY SEGREGATION: THE RELATIONSHIP OF SCHOOL DESEGREGATION AND HOUSING DESEGREGATION (Report 338) (Baltimore: Johns Hopkins University, Center for the Social Organization of Schools, 1983); J.H. Braddock & J.M. McPartland, *Social Psychological Processes that Perpetuate Racial Segregation: The Relationship Between School and Employment Desegregation,* JOURNAL OF BLACK STUDIES 19(3):267-89 (1989); A.W. Wells & R.L. Crain, in press 1994, *op. cit.*

through lower income levels, lower occupational status, and reduced housing mobility.[5]

We now understand more fully that the vestiges of segregation are not only the consequence of particular discriminatory actions, but are also outcomes of beliefs and practices that remain embedded in custom and culture. The vestiges of segregation remain with families and communities that have experienced decades of segregation and are reflected in the institutions that serve them. In many communities, predominantly minority schools are considered less effective and lower status institutions than desegregated or predominantly white schools, which is particularly disturbing in light of the fact that over the past 25 years increasing numbers of minority children attend racially isolated schools.[6]

Research has shown that even today teachers in American schools hold lower expectations for the academic achievement of minority students than for that of white students. These lower expectations directly and negatively affect teachers' instructional practices, school-level curricular

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[5]R.W. Rumberger & J.D. Willms, *The Impact of Racial and Ethnic Segregation on the Achievement Gap in California High Schools,* EDUCATIONAL EVALUATION AND POLICY ANALYSIS 14(4):377-96 (1993).

[6]G. Orfield, DESEGREGATION OF BLACK AND HISPANIC STUDENTS FROM 1968 TO 1980 (Washington, D.C.: Joint Center for Political Studies, 1982); G. Orfield et al., STATUS OF SCHOOL DESEGREGATION 1968-1986: A REPORT OF THE COUNCIL OF URBAN BOARDS OF EDUCATION AND THE NATIONAL SCHOOL DESEGREGATION RESEARCH PROJECT (Chicago: University of Chicago, 1989).

and grouping policies, minority students' opportunities to learn, and, consequently, their academic achievements.[7]

These beliefs explain research findings that African American students who attend predominantly African American schools are much less likely than other students with identical job qualifications to be selected for employment.[8] Recent U.S. Department of Education data reveal that African American high school graduates are less likely to be employed than white high school dropouts.[9] Perhaps the most insidious and tragic aspect of these beliefs is that African Americans themselves may be vulnerable to the caricature. The negative perception of their academic ability may undermine the confidence that even the most exceptionally able African American students have that they can achieve at high levels.[10]

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[7]T.L. Good, *Two Decades of Research on Teacher Expectations: Findings and Future Directions,* JOURNAL OF TEACHER EDUCATION 38(4):32-47 (1987); L. Dusek (Ed.), TEACHER EXPECTANCIES (Hillsdale, N.J.: Erlbaum, 1985); R.C. Rist, THE URBAN SCHOOL: A FACTORY FOR FAILURE (Cambridge, Mass.: MIT Press, 1973); J. Oakes, A. Gamoran, R.N. Page, *Curriculum Differentiation: Opportunities, Outcomes, and Meanings,* in P.W. Jackson (Ed.), HANDBOOK OF RESEARCH ON CURRICULUM (New York: Macmillan, 1992).

[8]J.H. Braddock, R.L. Crain, J.M. McPartland, & R.L. Dawkins, *Applicant Race and Job Placement Decisions: A National Survey Experiment*, INTERNATIONAL JOURNAL OF SOCIOLOGY AND SOCIAL POLICY 6:3-24 (1986).

[9]National Center for Educational Statistics, THE CONDITION OF EDUCATION 1993 (Washington, D.C.: U.S. Department of Education, 1993).

[10]C. Steele, *Race and the Schooling of Black Americans*, THE ATLANTIC MONTHLY 269(4):68-78 (April 1992).

These results were, unfortunately, the logic of racial segregation. They reinforced the prejudices that caused them, providing a rationalization for continuing discrimination.[11] The vestiges of school segregation are that pervasive. Their effects constrain the capacity of minority citizens to fully exercise their individual and civil liberties.

The primary goal of remedial plans in previously segregated schools must be to restore the victims of segregation to the position that they would have occupied in the absence of discrimination. Government-sanctioned racial segregation and its vestiges have caused direct harm to the institutional quality of schools, the quality of education that students receive, and the academic and postschool outcomes of that education. To achieve an adequate remedy, schools must rid themselves of the institutional vestiges of forced racial separation so as to enhance the quality of educational opportunities available to students in those schools. Further, attention must be focused on the outcomes of educational opportunities for the victims of segregation. Attention to outcomes is essential for two reasons. First, outcomes constitute the best test of whether discriminatory acts and vestiges of segregation are remedied. Second, racial discrimination is an act against individuals. To restore individuals to the position they would have occupied in the absence of discrimination means to eradicate the educational deficits or problems that might have been caused by racial segregation and perpetuated by its vestiges.

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[11]G.D. Jaynes & R.M. Williams (Eds.), A COMMON DESTINY: BLACKS AND AMERICAN SOCIETY (Washington, D.C.: Academy Press, 1989); L.H. Fuchs, THE AMERICAN KALEIDOSCOPE: RACE, ETHNICITY, AND THE CIVIC CULTURE (Hanover, N.H.: Wesleyan University Press, 1990); G. Allport, 1954, *op. cit.*

In addition to increased understanding about segregation and its vestiges and harms, social science has developed extensive knowledge concerning the remedial effectiveness of desegregation strategies and educational programs. This statement reports on social science findings on which there is substantial scholarly evidence.

The primary focus of this statement is on *Milliken II* educational remedies for school segregation. The statement is divided into three parts. Part I examines the potential remedial effectiveness of specific educational programs and policies. Part II discusses indicators and issues of measurement in assessing the effects of educational remedies. Part III, the conclusion, considers the relationship between educational programs and desegregation in fully addressing the vestiges and harms of school segregation.

I. SHAPING EFFECTIVE EDUCATIONAL REMEDIES

Almost all *Milliken II* plans contain some effort to achieve some measure of desegregation. However, an important goal of *Milliken II* plans is to remedy the vestiges harming students who continue to attend substantially racially isolated schools. Research and observation have shown that remedial educational programs that are successful in remedying the vestiges of segregation include: (1) increased educational resources; (2) innovative educational programs that target low-income racially isolated students; and (3) a focus on program implementation and changing the attitudes and behaviors of teachers, administrators, and other school personnel who work with students.

A. Increased Educational Resources

Some researchers have questioned whether there is a relationship between the amount of resources spent on

education and levels of student outcomes.[12] Their work has formed the basis of the counterintuitive notion that money does not matter in schools. Use of the most rigorous and valid analytical models, however, reveals much more positive effects of educational inputs than previously identified. By reanalyzing the same data used to support the conclusion that money matters little,[13] researchers using different methods have revealed a pattern of significant positive effects of higher per-pupil expenditure and teacher experience on student achievement.[14] Indeed, the most recent studies in education, economics, and related social sciences reveal even greater effects. These analyses provide additional evidence of significant positive relations between student achievement and higher per-pupil expenditure, teacher experience, teacher salary, and reduced class size, after controlling for student background.[15] The average size of these relationships is large

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[12]E.A. Hanushek, *Throwing Money at Schools,* JOURNAL OF POLICY ANALYSIS AND MANAGEMENT 1:19-41 (1981); E.A. Hanushek, *The Impact of Differential Expenditures on School Performance,* EDUCATIONAL RESEARCHER 18(4):45-51, 62 (1989); E.A. Hanushek, *When School Finance "Reform" May Not Be a Good Policy,* HARVARD JOURNAL ON LEGISLATION 28:423-56 (1991).

[13]E.A. Hanushek, 1989, *op. cit.;* E.A. Hanushek, 1991, *op. cit.*

[14]L.V. Hedges, R.D. Laine, & R. Greenwald, *Does Money Matter? A Meta-Analysis of Studies of the Effects of Differential School Inputs on Student Outcomes,* EDUCATIONAL RESEARCHER 23(3):5-14 (1994); R. Greenwald, L.V. Hedges, & R.D. Laine, *When Reinventing the Wheel is Not Necessary: A Case Study in the Use of Meta-Analysis in Educational Finance,* JOURNAL OF EDUCATION FINANCE 20:1-20 (1994).

[15]R.D. Laine, F. Greenwald, & L.V. Hedges, *Does Money Matter: A Research Synthesis of the Relation Between Educational Resource Inputs and Student Outcomes,* in L.O. Picus (Ed.), 1995 YEARBOOK OF THE AMERICAN EDUCATIONAL FINANCE ASSOCIATION (Newbury

enough to be of policy significance. Increased resources can have a profound effect on low-achieving students.

B. Innovative Educational Programs

While increasing school resources generally can make a substantial contribution to remedying the vestiges and harms of segregation, it also matters how these resources are spent. During the past 15 years, a substantial amount of research has been conducted concerning educational programs that are particularly effective with low-achieving, racially isolated minority students. These types of programs have been part of numerous court-approved plans to remedy the vestiges and harms of segregation. Set forth below is a brief review of such programs, but the review is not comprehensive and a number of other types of programs and practices exist that may be effective. Much of this section is devoted to programs for children in the early grades because most research to date has been in these program areas. As discussed below, these types of programs are most effective accompanied by long-term follow-up programs in later grades. Effective programs must be developed across both elementary and secondary grade levels for these educational components to have their greatest impact.

There is a growing consensus among policymakers and educators that effective intervention in preschool, kindergarten, and early elementary grades results in significant positive

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Park, Cal.: Sage, in press). *See also* R. Ferguson, *New Evidence on How and Why Money Matters,* HARVARD JOURNAL ON LEGISLATION 28:465-98 (1991).

contributions to students' learning and development.[16] Academic success in the early grades is critically important to academic success throughout a student's school career and reduces the need for remedial and special education. While success in the early grades does not guarantee continued success, failure in the early grades is likely to lead to failure in later schooling. Indeed, economically disadvantaged third-graders who are significantly behind in reading or have been retained one grade level have approximately a one-in-four chance of ultimately graduating from high school.[17]

Research consistently supports the effectiveness of early childhood and preschool education programs, particularly for low-income, racially isolated minority children.[18] Early intensive intervention can keep these children from falling

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[16]R.E. Slavin, N.L. Karweit, & B.A. Wasik (Eds.), PREVENTING EARLY SCHOOL FAILURE: RESEARCH, POLICY, AND PRACTICE (Boston: Allyn & Bacon, 1994).

[17]D.N. Lloyd, *Prediction of School Failure from Third Grade Data,* EDUCATIONAL AND PSYCHOLOGICAL MEASUREMENT 38:1193-1200 (1978).

[18]B.A. Wasik & N.L. Karweit, *Off to a Good Start: Effects of Birth to Three Interventions on Early School Success,* in R.E. Slavin et al., 1994, *op. cit.;* G. Castro & K. White, *The Efficacy of Early Intervention Programs with Environmentally At-Risk Infants*, in M. Frank (Ed.), INFANT INTERVENTION PROGRAMS: TRUTHS AND UNTRUTHS (Binghampton, N.Y.: Harworth Press, 1985); D.C. Farran, *Effects of Intervention with Disadvantaged and Disabled Children: A Decade Review*, in S.J. Meisels & J.P. Shonkoff (Eds.), HANDBOOK OF EARLY CHILDHOOD INTERVENTION (New York: Cambridge University Press, 1990).

behind academically when they enter school.[19] Programs that provide services directly to the child (as opposed to parents only), are longer in duration, and begin before kindergarten appear to be the most effective.[20]

Early childhood and preschool programs alone, however, are not enough to alter the life chances of children born and reared in poverty and racial isolation.[21] While studies reveal robust effects from preschool participation after the end of one year of participation, such gains quickly diminish without follow-up support in later grades.[22] Research on Chapter 1

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[19]C.T. Ramey & F.A. Campbell, *Preventive Education for High-Risk Children: Cognitive Consequences of the Carolina Abecedarian Project,* AMERICAN JOURNAL OF MENTAL DEFICIENCY 88(5):515-23 (1984); C.T. Ramey, D.M. Bryant, & T.M. Suarez, *Preschool Compensatory Education and the Modifiability of Intelligence: A Critical Review,* in A. Ditterman (Ed.), CURRENT TOPICS IN HUMAN INTELLIGENCE (Norwood, H.J.: Ablex, 1985); H.L. Garer, THE MILWAUKEE PROJECT: PREVENTING MENTAL RETARDATION IN CHILDREN AT RISK (Washington, D.C.: American Education on Mental Retardation, 1988).

[20]C.T. Ramey et al., 1985, *op. cit.*; E.R. Jester & B.J. Guinagh, *The Gordon Parent Education Infant and Toddler Program*, in The Consortium for Longitudinal Studies, AS THE TWIG IS BENT . . . LASTING EFFECTS OF PRESCHOOL PROGRAMS (Hillsdale, N.J.: Erlbaum, 1983).

[21]J.S. Fuerst & D. Fuerst, CHICAGO EXPERIENCE WITH EARLY CHILDHOOD PROGRAMS: THE SPECIAL CASE OF THE CHILD PARENT CENTER PROGRAMS (Chicago: Loyola University, 1991); B.A. Wasik & N.L. Karweit, *Can Preschool Alone Prevent Early Failure?* in R.E. Slavin et al., 1994, *op. cit.*

[22]M. Deutsch, C.P. Deutsch, T.J. Jordan, & R. Gullo, *The IDS Program: An Experiment in Early and Sustained Enrichment,* in The Consortium for Longitudinal Studies, 1983, *op. cit.*; S.W. Gray, B.K.

programs suggests that remediation of learning deficits is best accomplished by programs that span over primary and secondary levels.[23] Beginning remedial programs in later grades is not as effective.

The most rigorous control group studies of the effects of kindergarten favor full-day over part-time attendance after controlling for initial student differences. These effects are most positive for educationally disadvantaged students.[24] However, like the findings for early childhood and preschool programs, there is little evidence of long-term effects of kindergarten attendance, even full-time attendance, without follow-up in the early elementary grades.[25]

Ramsey, & R.A. Klaus, *The Early Training Project (1962-1980),* in The Consortium for Longitudinal Studies, 1983, *op. cit.*; L.J. Schweinhart & D.P. Weikart, *The Effects of the Perry Preschool Program on Youths Through Age 15--A Summary,* in The Consortium for Longitudinal Studies, 1983, *op. cit.*; E.K. Beller, *The Philadelphia Study: The Impact of Preschool on Intellectual and Socioemotional Development,* in The Consortium for Longitudinal Studies, 1983, *op. cit.*

[23]U.S. Department of Education, REINVENTING CHAPTER I: THE CURRENT CHAPTER I PROGRAM AND NEW DIRECTIONS (Washington, D.C.: U.S. Department of Education, Office of Policy and Planning, 1993). M.M. Kennedy, B.F. Birman, & R. Demaline, THE EFFECTIVENESS OF CHAPTER I SERVICES (Washington, D.C.: U.S. Department of Education, 1986); R.E. Slavin et al., 1994, *ibid.*

[24]B.A. Wasik & N.L. Karweit, 1994, *op. cit.*

[25]I. Lazar & R. Darlington, *Lasting Effects of Early Education,* MONOGRAPHS OF THE SOCIETY FOR RESEARCH ON CHILD DEVELOPMENT 47 (2-3) (1982); R. McKey, L. Condelli, H. Ganson, B. Barrett, C. McConkey, M. Plantz, THE IMPACT OF HEAD START ON CHILDREN, FAMILIES, AND COMMUNITIES (Washington, D.C.: U.S. Department of Health and Human Services, 1985); B.A. Wasik & N.L. Karweit, 1994, *op. cit.*

One-to-one tutoring of low-achieving elementary grade students is one of the most effective instructional interventions available.[26] Virtually all tutoring program studies show positive effects, despite wide variations in program curriculum, tutoring methods, duration, and other characteristics. These effects extend beyond academic learning to reductions in grade retentions and special education referrals.[27] Programs that use certified teachers, as opposed to paraprofessionals, as tutors, that integrate with regular classroom instruction, and that are longer in duration tend to have the greatest and longest-lasting effects.[28]

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[26]B.A. Wasik & R.E. Slavin, *Preventing Early Reading Failure with One-To-One Tutoring,* in R.E. Slavin et al., 1994, *op. cit.*; R.E. Slavin, N.L. Karweit, & N.A. Madden (Eds.), EFFECTIVE PROGRAMS FOR STUDENTS AT RISK (Boston: Allyn & Bacon, 1989).

[27]R.E. Slavin, N.A. Madden, N.L. Dolan, & B.A. Wasik, SUCCESS FOR ALL: A RELENTLESS APPROACH TO PREVENTION AND EARLY INTERVENTION IN ELEMENTARY SCHOOLS (Arlington, Va.: Educational Research Service, 1992); E. McCleary, *Report of Results of Tutorial Reading Project,* THE READING TEACHER 24:556-59 (1971).

[28]D. DeFord, G.S. Pinnell, C. Lyons, & P. Young, READING RECOVERY: VOLUME IX, REPORT OF THE FOLLOW-UP STUDIES (Columbus, Ohio: The Ohio State University, 1988); R.E. Slavin et al., 1992, *op. cit.*; A.A. Silver & R.A. Hagin, PREVENTION OF LEARNING DISABILITIES (Department of Education, 1979); L.E. Arnold, N. Barnebey, J. McManus, D.J. Smeltzer, A. Conrad, & L. Desgranges, *Prevention of Specific Perception Remediation for Vulnerable First-Graders,* ARCHIVES OF GENERAL PSYCHIATRY 34:1279-94 (1977); D.G. Ellson, P. Harris, & L. Barber, *A Field Test of Programmed and Directed Tutoring,* READING RESEARCH QUARTERLY 3:307-67 (1968).

Research shows that academic achievement is generally enhanced in smaller classes.[29] Pupils with lower academic ability tend to benefit more from smaller classes than pupils of average ability. Smaller class sizes are particularly effective for economically and socially disadvantaged children.[30] Lower student/staff ratios are one of several important factors that positively affect achievement in compensatory education programs. The benefits of small class size extend beyond academic achievement to more positive student attitudes toward teachers and school, increased student motivation to learn, and higher student self-concept.[31] But, as we argue below, the effectiveness of reduced class size is dependent on instructional processes and opportunities to learn that are available to students within those classes.

Counseling and career guidance programs are potentially effective means to help address the vestiges and harms of segregation. Research reveals that counseling programs can

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[29]G.V. Glass & M.L. Smith, *Meta-Analysis of the Research on Class Size and Achievement,* EDUCATIONAL EVALUATION AND POLICY ANALYSIS 1:2-16 (1979); L.V. Hedges & W. Stock, *The Effect of Class Size: An Examination of Rival Hypotheses,* AMERICAN EDUCATIONAL RESEARCH JOURNAL 20:63-85 (1983).

[30]Educational Research Service, CLASS SIZE: A SUMMARY OF RESEARCH (Arlington, Va.: Educational Research Service, 1978); L.F. Carter, *The Sustaining Effect Study of Compensatory and Elementary Education,* EDUCATIONAL RESEARCHER 21:4-13 (1984); G.V. Glass, L.S. Cahen, M.L. Smith, & N.N. Filby, SCHOOL CLASS SIZE: RESEARCH AND POLICY (Beverly Hills, Cal.: Sage, 1982); J.D. Finn & C.M. Achilles, *Answers and Questions About Class Size: A Statewide Experiment,* AMERICAN EDUCATIONAL RESEARCH JOURNAL 27:557-77 (1990).

[31]G.V. Glass & M.L. Smith, 1979, *op. cit.*; H.M. Cooper, 1986, *op. cit.*; R.E. Slavin et al., 1989, *op. cit.*

help improve student academic achievement, social conduct, attendance, and drop-out rates.[32] Counseling has been shown to help improve student self-concept, motivation, sense of personal efficacy, attitude toward school, and interpersonal relations. In addition, career guidance programs have been found to increase the career awareness of students and the rates at which students explore nontraditional job opportunities. The programs have been found to be effective at both elementary and secondary grade levels and for minority and economically disadvantaged students.[33]

Research shows that portions of academic gains made during the regular school year may be lost over summer months and that this problem is potentially acute for economically disadvantaged students.[34] Poverty and racial isolation limit student exposure to educational resources outside of school and

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[32]E.L. Herr, *Research in Guidance*, in G. Walz & L. Benjamin (Eds.), NEW IMPERATIVES FOR GUIDANCE (Ann Arbor, Mich.: ERIC Counseling and Personnel Services Clearinghouse, 1978); E.L. Herr, *Pupil Personnel Staff: Discussion*, in H.J. Walberg (Ed.), IMPROVING EDUCATIONAL STANDARDS AND PRODUCTIVITY: THE RESEARCH BASIS FOR POLICY (Berkeley, Cal.: McCutchan, 1982); G.R. Walz, *Pupil Personnel Staff*, in H.J. Walberg, 1982, *ibid.*

[33]E.L. Herr, 1982, *ibid.*

[34]B. Heyns, SUMMER LEARNING AND THE EFFECTS OF SCHOOLING (New York: Academic Press, 1978); D.P. Hayes & J. Grether, THE SCHOOL YEAR AND VACATIONS: WHEN DO STUDENTS LEARN? (paper presented at the Eastern Sociological Association Convention, New York, 1969); D.P. Hayes and J.P. King, THE DEVELOPMENT OF READING ACHIEVEMENT DIFFERENTIALS DURING THE SCHOOL YEAR AND VACATIONS (Ithaca, N.Y.: Cornell University, 1974); R. Murnane, The Impact of School Resources on the Learning of Inner City Children (doctoral dissertation, Yale University, 1974).

increase the importance of schools in providing additional opportunities to students. Summer learning programs provide additional exposure to maintain and build upon the educational gains of students who may not otherwise have the opportunity to participate in academically oriented learning activities during the summer.[35] Summer school programs in early elementary grades have been found to help sustain the effects of early childhood education programs.[36]

Historically, cocurricular programs have been considered to be an important part of the total school curriculum. They take many forms, both athletic and nonathletic, and serve a variety of purposes.[37] Research has shown a positive relationship between participation in cocurricular programs and the development of a student's

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[35]B. Heyns, SUMMER PROGRAMS AND COMPENSATORY EDUCATION: THE FUTURE OF AN IDEA (paper presented at the Conference on Effects of Alternative Designs of Compensatory Education, Office of Educational Research and Improvement, U.S. Department of Education, Washington, D.C., 1986); D.P. Hayes & J. Grether, 1969, *op. cit.*; D.P. Hayes & J.P. King, 1974, *op. cit.*; R. Murnane, 1974, *op. cit.*

[36]H.L. Garber, THE MILWAUKEE PROJECT: PREVENTING MENTAL RETARDATION IN CHILDREN AT RISK (Washington, D.C.: American Association on Mental Retardation, 1988); B.A. Wasik & N.L. Karweit, 1994, *op. cit.*

[37]G. Graham, *Student Activities: An Overview and a Rationale*, NATIONAL ASSOCIATION OF SECONDARY SCHOOL PRINCIPALS BULLETIN 48 (294):1-16 (1964); R.W. Frederick, THE THIRD CURRICULUM: STUDENT ACTIVITIES IN AMERICAN EDUCATION (New York: Appleton-Century-Crofts, 1959); A.C. Ornstein & D.U. Levine, AN INTRODUCTION TO THE FOUNDATIONS OF EDUCATION (3d ed.) (Boston: Houghton Mifflin, 1985); L.B. Otto, *Extracurricular Activities*, in H.J. Walberg (Ed.), 1982, *op. cit.*

educational aspirations, especially for low-achieving students.[38] Other research indicates that students who participate in these programs report a greater identification with their school, are more happy with their school experiences, and take more initiative in their work than students who do not participate in these programs.[39] Further, participation fosters greater opportunities for student contact and social development with teachers and other adults in nonclassroom settings. Research shows that students who participate in cocurricular activities report higher levels of self-concept and self-esteem than nonparticipating students.[40] Participation has been relatively positively to adult socializing patterns, greater social integration, and lower senses of self-estrangement and powerlessness as long as 15 years after high school graduation.[41] Participation has been found further to relate

[38]W.G. Sapdy, *Status Achievement, and Motivation in the American High School,* SCHOOL REVIEW 79:379-403 (1971); D.F. Alvin & D.L. Morgan, EXTRACURRICULAR ACTIVITIES: REVIEW AND DISCUSSION OF THE RESEARCH ON EDUCATIONAL PRACTICES (paper presented for the State of Georgia Department of Education, 1979); L.B. Otto, 1982, *op. cit.* E.E. Snyder & E. Spreitzer, *Participation in Sports as Related to Educational Expectations Among High School Girls*, SOCIOLOGY OF EDUCATION 50:47-55 (1977).

[39]M.L. Nover, STUDENT INVOLVEMENT AND THE PSYCHOLOGICAL EXPERIENCE OF THE HIGH SCHOOL (paper presented at the American Psychological Association Annual Meeting, Los Angeles, 1981).

[40]J.S. Yarworth & W.J. Gautheir, Jr., *Relationships of Student Self-Concept and Selected Personal Variables to Participation in School Activities,* JOURNAL OF EDUCATIONAL PSYCHOLOGY 70:335-44 (1978).

[41]L.B. Otto & D.L. Featherman, *Social, Structural, and Psychological Antecedents of Self-Estrangement and Powerlessness*,

positively to adult involvement in voluntary associations and to relate indirectly to adult political behavior.[42]

Finally, research finds that programs designed to involve parents directly in their children's education have significantly positive effects on student achievement.[43] General support of schooling by parents, through volunteer programs, Parent-Teacher Associations, and Adopt-A-School programs, among others, relates only weakly to a school's academic effectiveness. The most effective parent involvement takes the form of activities and attitudes that directly support student learning, including expressed interest in school work, participation in parent-teacher conferences, expressing high expectations for student academic success, and ensuring

AMERICAN SOCIOLOGICAL REVIEW 40:701-19 (1975); L.B. Otto, *Social Integration and the Status-Attainment Process*, JOURNAL OF SOCIOLOGY 81:1360-83 (1976).

[42]M.P. Hanks & B.K. Eckland, *Athletes and Social Participation in the Educational Attainment Process*, SOCIOLOGY OF EDUCATION 40:271-94 (1976); M.P. Hanks & B.K. Eckland, *Adult Voluntary Associations in Adolescent Socialization,* SOCIOLOGICAL QUARTERLY 19:481-90 (1978).

[43]W.D. Hawley, R.L. Crain, C.H. Rossell, M.A. Smylie, R.R. Fernandez, J.W. Schofield, R. Tompkins, W.T. Trent, & M.S. Zlotnik, STRATEGIES FOR EFFECTIVE DESEGREGATION: LESSONS FROM RESEARCH (Lexington, Mass.: Lexington Books, 1983); J. Crawford, *Instructional Activities Related to Achievement Gain in Chapter I Classes*, in R.E. Slavin et al., 1989, *op. cit.*; P. Griswold, K. Cotton, & J. Hansen, EFFECTIVE COMPENSATORY EDUCATION SOURCEBOOK, VOLUMES I AND II (Washington, D.C.: U.S. Department of Education, 1985); M.C. Wang, G.D. Haertel, & H.J. Walberg, *Toward a Knowledge Base for School Learning*, REVIEW OF EDUCATIONAL RESEARCH 63(3):249-94 (1993).

attendance and completion of homework.[44] Home reinforcement of classroom learning activities appears especially beneficial for low-income, racially isolated students.[45]

C. Implementation of Educational Programs

The adoption and funding of new programs and policies are not sufficient to ensure their effectiveness. The effectiveness of even the most promising programs and policies for low-achieving, racially isolated students depends significantly on implementation and upon changing the behaviors, attitudes, and practices of teachers and administrators in schools and classrooms.[46] Numerous scholars have noted the importance of the substance or content and instructional processes that function within the general structures of programs and policies.[47] Long-lasting and far-reaching change will need to address what goes on inside new structures. The real issue is the quality of the experience, as determined by the amount and quality of teacher-student academic and social interactions and the approaches and processes that teachers adopt in developing and implementing instructional activity. Indeed, there is a growing body of research that points to the particular effectiveness of early

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[44]M.C. Wang et al., 1993, *ibid.*

[45]W.D. Hawley et al., 1983, *op. cit.*

[46]M. Fullan, THE NEW MEANING OF EDUCATIONAL CHANGE (New York: Teachers College Press, 1991); W.D. Hawley et al., 1983, *op. cit.*; R.E. Slavin et al., 1989, *op. cit.*; R.E. Slavin et al., 1994, *op. cit.*

[47]M.C. Wang et al., 1993, *op. cit.*; R.E. Slavin et al., 1989, *op. cit.*; R.E. Slavin et al., 1994, *op. cit.*

emphasis on reading and language development and on direct instructional models and metacognitive instructional processes to promote the learning and development of low-achieving, racially isolated students.[48]

The research on change in educational organizations identifies four conditions that are crucial to the successful implementation of new programs and policies and change in school and classroom practice. The first condition is economic and political stability.[49] Change is more likely to occur when there are adequate and predictable levels of funding available for general educational expenditures and for new programs over a sustained period of time. It is also more likely to occur under conditions of long-term political and community support. Implementation and change are enhanced when local governments, community leaders, and state governments act as partners with schools and school districts rather than as adversaries. A crucial aspect of political and community support is patience and willingness to give adequate time for implementation of new programs and for effects of those new programs to occur.

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[48]B. Means & M.S. Knapp, TEACHING ADVANCED SKILLS TO EDUCATIONALLY DISADVANTAGED STUDENTS (Washington, D.C.: U.S. Department of Education, 1991); M.K. Stein, G. Leinhardt, & W. Bickel, *Instructional Issues for Teaching Students at Risk*, in R.E. Slavin et al., 1989, *op. cit.*; R.E. Slavin et al., 1994, *op. cit.*; M.C. Wang et al., 1993, *op. cit.*

[49]M. Fullan, 1991, *op. cit.*; W.D. Hawley et al., 1983, *op. cit.*; J. Feldman, E. Kirby, S.E. Eaton, & A. Morantz, STILL SEPARATE, STILL UNEQUAL: THE LIMITS OF MILLIKEN II'S EDUCATIONAL COMPENSATION REMEDIES (Cambridge, Mass.: Harvard Project on School Desegregation, 1994).

The second condition that influences implementation and the effectiveness of change is the adoption of systemic, comprehensive approaches to improvement. The research on educational change strongly supports the conclusion that little ventured is little or nothing gained.[50] Schools and school districts seem more successful in bringing about change the more change they attempt. Research also suggests that because of the organizational complexities of schools and school districts, and because of the tremendous powers of persistence that often control complex organizations, effective change must be approached systematically.[51] Problems must be addressed at different levels and in different places in the organization concurrently. Efforts to change one aspect of a school system (e.g., the classroom) must be accompanied by efforts to change other related aspects (e.g., the school, the district, and the state). Further, change must be approached comprehensively. That is, the greatest amount of change may be brought about through strategic, mutually reinforcing combinations of programs and policies, not through collections of independent programs. Indeed, some of the greatest documented academic successes for low-income, racially isolated minority students have occurred in schools that have combined research-based preschool programs, kindergarten programs, and early elementary programs in reading, writing, and language arts with one-to-one tutoring, parent involvement, and family support activities.[52]

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[50]M. Fullan, 1991, *op. cit.*

[51]M.S. Smith & J. O'Day, *Systemic School Reform*, POLITICS OF EDUCATION YEARBOOK 1990 (New York: Taylor & Francis, 1990).

[52]R.E. Slavin et al., 1992, *op. cit.*; N.A. Madden, R.E. Slavin, N.L. Karweit, L.J. Dolan, & B.A. Wasik, *Success for All: Longitudinal Effects*

The third crucial condition for implementation and change is the existence of comprehensive, ongoing programs of professional learning and development for teachers, administrators, and other school personnel.[53] New programs and policies frequently require the attainment of new knowledge and skills by teachers and other school personnel who are charged with their implementation. Effective professional development means more than one-day workshops, institute days, or beginning-of-the-year training sessions. It means extensive, ongoing study; in-class experimentation, feedback, and follow-up after initial training; and clinical supervision, peer or expert observation, and coaching. It also means developing new opportunities for collaborative planning, work, and problem solving among teachers and professional staff.[54] In the long run, a comprehensive program of professional development built around the implementation of programs and practices known to be effective with low-income,

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of a Restructuring Program for Inner-City Elementary Schools, AMERICAN EDUCATIONAL RESEARCH JOURNAL 30:123-48 (1993); J. Comer, *Educating Poor Minority Children*, SCIENTIFIC AMERICAN 259:42-48 (1988).

[53]S. Sarason, THE PREDICTABLE FAILURE OF EDUCATIONAL REFORM (San Francisco: Jossey-Bass, 1990); Fullan, 1991, *op. cit.*; W.D. Hawley et al., 1983, *op. cit.*; R.E. Slavin et al., 1989, *op. cit.*; M.W. McLaughlin & D.C. Marsh, *Staff Development and School Change*, TEACHERS COLLEGE RECORD 80(1):69-94 (1978).

[54]A. Lieberman & L. Miller, STAFF DEVELOPMENT FOR THE '90s (New York: Teachers College Press, 1993); B.R. Joyce, R.H. Hersh, & M. McKibbon, THE STRUCTURE OF SCHOOL IMPROVEMENT (New York: Longman, 1983).

racially isolated students may be the most cost-effective means of improving these students' achievement.[55]

The fourth condition consists of systems of monitoring and evaluation.[56] Successful implementation and change require accurate, relevant information about progress that can be used to identify and solve problems and assess goal attainment. Rigorous evaluation is essential to determine whether educational programs are working and to ensure accountability that additional resources are being used directly for remedying the vestiges and harms of segregation. There are various models of independent evaluation of remedial educational programs by local expert panels that prevent excessive court entanglement in the administration of remedial orders.

II. ASSESSING THE EFFECTIVENESS OF EDUCATIONAL REMEDIES

Policy analysts typically assess program effectiveness by focusing on resource inputs, processes, and outcomes.[57] The levels at which evaluation of educational programs take place are dependent upon technical and economical feasibility, as well as educational meaningfulness.[58] When analysts lack the

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[55]R.E. Slavin, *Statewide Finance Reform: Ensuring Educational Adequacy for High Poverty Schools*, EDUCATIONAL POLICY (in press).

[56]J. Feldman et al., 1994, *op. cit.*; Fullan, 1991, *op. cit.*; W.D. Hawley et al., 1983, *op. cit.*; Smith & O'Day, 1993, *op. cit.*

[57]A. Wildavsky, SPEAKING TRUTH TO POWER: THE ART AND CRAFT OF POLICY ANALYSIS (New Brunswick, N.J.: Transaction Publishers, 1987).

[58]G. Majone, EVIDENCE, ARGUMENT, AND PERSUASION IN THE POLICY PROCESS (New Haven, Conn.: Yale University Press, 1989).

technology and resources to systematically monitor a policy outcome, inputs and processes are all that can be assessed. To determine the extent to which educational remedies have addressed the harmful vestiges of segregation, policy analysts can and must examine outcomes as well.

Five types of indicators are relevant to assessing a school district's progress in remedying the harmful vestiges of segregation. These types of indicators are common in educational policy analysis generally and in desegregation research in particular. As explained below, reliable measures of these indicators presently exist. In addition, analytical techniques that are required to assess the relationships among resource inputs, changes in educational processes, and student outcomes attributable to those inputs and processes are readily available and represent standard practice in social science research and education policy analysis.

The first two types of indicators pertain to the resources that enter into the educational process. The first type—student resources—are those resources brought into the educational process by the students entering the system. These resources are reflected in the students' individual, family, and community characteristics. They provide a necessary context for analyzing the implementation and outcomes of the educational system and remedies. Relevant indicators of student resources for schooling process include health status, economic status, family site and structure, housing, minority status, parent education and occupational status, experience with crime, and racial isolation.

The second type of indicators pertain to school resources. These indicators represent basic aspects of the educational program. They include funding, academic and cocurricular programs, courses available to students, facilities, and instructional materials. They also include the number and quality of teachers and other professional staff, school and class

size, and the ratio of various kinds of professional staff (e.g., counselors, social workers, psychologists, resource teachers) to students.

School processes—the operating practices of schools—form the third type of indicators. Such processes include those related to the development and maintenance of the curriculum and to teachers' classroom practices and the delivery of instruction. They include school and classroom climate for instruction, the provision of special services, and the identification of student needs for such services. They also include processes relating to the continuing education and professional development of school staff and the governance and administration of the school and the school system.

Student opportunities to learn comprise the fourth type of indicators. These indicators call attention to the actual engagement of students with the school resources and processes that promote learning.[59] Schools may have resources appropriate to meet the needs of their students without necessarily delivering those resources to the appropriate students. For example, students must have access to the kind of instruction that prepares them for achievement tests if they are to maximize their performance on such tests. Failure to provide students these opportunities may be most likely to occur in schools serving large numbers of disadvantaged students. High concentrations of disadvantaged students may overwhelm the capacity of schools to match student needs with school

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[59]S.L. Traiman, THE DEBATE ON OPPORTUNITY TO LEARN STANDARDS (Washington, D.C.: National Governors Association, 1993); A. Porter, OPPORTUNITY TO LEARN, BRIEF NO. 7 (Washington, D.C.: Office of Educational Research and Improvement, U.S. Department of Education, 1990).

resources and create meaningful opportunities for students to learn.[60]

Student outcomes constitute the fifth type of indicators that must be examined to assess the remediation of harmful vestiges. The kinds of educational outcomes that should be examined in *Milliken II* remedies would include increased academic achievement as measured by higher standardized test scores. They also would include other outcomes such as lower dropout rates, higher graduation rates, career goals, positive racial attitudes, higher college-going rates, lower incidence of teenage childbirth, lower arrest and incarceration rates, greater educational attainment, and higher occupational status.

The contention is sometimes made that disadvantaged and minority students are not likely to show improvement on standardized test scores from increased resources. This contention is inaccurate. Numerous studies have shown changes in minority students' standardized test scores generally and in relation to specific interventions. For example, analyses of data from National Assessment of Educational Progress found that in the 1970s, African-American school children showed gains on standardized reading tests of approximately one standard deviation, closing one-third of the gap between their scores and those of white school children.[61] Evaluations of preschool, follow-through and elementary school reading programs have

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[60]C. Riehl, G. Natriello, & A.M. Pallas, LOSING TRACK: THE DYNAMICS OF STUDENT ASSIGNMENT PRACTICES IN HIGH SCHOOL (paper presented at the American Sociological Association Annual Meeting, Cincinnati, Oh., August 1992).

[61]N.W. Burton & L.V. Jones, *Recent Trends in Achievement Levels of Black and White Youth*, EDUCATIONAL RESEARCHER 11:10-17 (1982); L.V. Jones, *White-Black Achievement Differences: The Narrowing Gap*, AMERICAN PSYCHOLOGIST 539:1203-13 (1984).

employed different types of standardized measures and have found significant changes in minority student performance that were attributable to the interventions.[62] Carefully executed randomized experimental and quasi-experimental designs validate the findings of these studies.

Measurement of these five types of indicators is standard practice in both the policy community and the social science research community. The National Center for Education Statistics and many state governmental agencies have devoted significant time and attention to developing and refining systems of social and educational indicators. These systems often include many of the types of indicators noted in this statement. Indicators of student resources, including family and community characteristics, are captured by data from the U.S. Census, which data can now be reported for individual school districts. Many of the school resource, school process, and student outcome indicators have been measured reliably by student and teacher surveys. For example, the U.S. Department of Education has conducted national surveys of students and teachers that contain items focusing on student achievement, delinquency, and postgraduate outcomes.[63] Indicators of student opportunities to learn are entering the policy arena through the efforts of the National Governors' Association and the U.S.

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[62]The Consortium on Longitudinal Studies, 1983, *op. cit.*; J.A. Stallings, *Implementation and Child Effects of Teaching Practices in Follow Through Classrooms*, MONOGRAPHS OF THE SOCIETY FOR RESEARCH IN CHILD DEVELOPMENT 40 (1975); R.E. Slavin et al., 1994, *op. cit.*

[63]National Center for Educational Statistics, THE NATIONAL EDUCATIONAL LONGITUDINAL SURVEY (Washington, D.C.: U.S. Department of Education, 1994); National Institute of Education, THE SAFE SCHOOL STUDY (Washington, D.C.: U.S. Department of Education, 1978).

Department of Education's National Center on Organization and Restructuring of Schools at the University of Wisconsin, among others. All the above-mentioned measures are in the public domain and are readily available for local adoption.

Measurement of all five types of indicators is increasingly becoming a routine, ongoing function of many state educational agencies. For example, the state of Missouri has developed a series of measures and standards for the Missouri School Improvement Program.[64] This series contains measures relating to school resources, including programs available to students, staffing ratios and class size, and staff certification and quality. It also contains measures relating to school processes, such as curriculum development practices, instructional practices, instructional climate, availability of special programs, guidance and support services, teacher professional development, and school governance and administration. Indicators of student performance and outcomes are also measured in the Missouri School Improvement Program. These measures include achievement on standardized tests, performance on college entrance exams (i.e., ACT, SAT), completion of vocational education programs, the percentage of students completing high school, the percentage of students completing a postsecondary program, and the percentage of students employed following graduation.

Analytical techniques are also readily available to assess accurately relationships among student and school resources, school processes and practices, student opportunities to learn, and student outcomes. While there are a large number of factors that may account for changes in these indicators, particularly

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[64]Missouri Education Information System, MISSOURI SCHOOL IMPROVEMENT PROGRAM STANDARDS AND INDICATORS (1994).

those indicators of student outcomes, a variety of procedures exist that can be used to identify the unique effects of programs and policies. Among the most standard social science research procedures that are used to "control" for the influence of extraneous factors are randomized experimental and quasi-experimental research designs and multivariate statistical techniques.[65] These designs and techniques are used routinely in social science and education research, including research on the outcomes of school desegregation, and are easily applied in assessing the effectiveness of *Milliken II* remedies.

It is important to consider *when* it is appropriate to assess a school district's progress in remedying the vestiges of segregation under a *Milliken II* plan. Educational research is consistent in its conclusion that bringing about meaningful, long-lasting change in schools and school districts takes significant amounts of time.[66] Complex educational inequalities require systemic change and cannot be redressed overnight. *Milliken II* educational plans are aimed at remedying the

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[65]B.J. Weiner, STATISTICAL PRINCIPLES IN EXPERIMENTAL DESIGN (New York: McGraw-Hill, 1971); D.T. Campbell & J.C. Stanley, EXPERIMENTAL AND QUASI-EXPERIMENTAL DESIGNS FOR RESEARCH (Dallas: Houghton Mifflin, 1963); F.N. Kerlinger, FOUNDATIONS OF BEHAVIORAL RESEARCH (New York: Holt, Rinehart and Winston, 1973); F.N. Kerlinger & E.J. Pedhazur, MULTIPLE REGRESSION IN BEHAVIORAL RESEARCH (New York: Holt, Rinehart and Winston, 1973); A.S. Bryk & S.W. Raudenbush, HIERARCHICAL LINEAR MODELS: APPLICATION AND DATA ANALYSIS METHODS (Newbury Park, Cal.: Sage, 1992).

[66]M. Fullan, 1991, *op. cit.*; S. Sarason, THE CULTURE OF THE SCHOOL AND THE PROBLEM OF CHANGE (Boston: Allyn & Bacon, 1979); R.F. Elmore & M.W. McLaughlin, STEADY WORK: POLICY, PRACTICE, AND THE REFORM OF AMERICAN EDUCATION (Santa Monica, Cal.: Rand Corporation, 1988).

vestiges of historical systems of segregation and discrimination. It would be unreasonable to expect to find strong evidence of turning around a history of pervasive discrimination reaching across generations in only a few years, regardless of the amount of resources initially applied.

There are other reasons why it is difficult to assess the effectiveness of educational remedies in the short-term. Research on the long-term effects of school desegregation demonstrates that the most positive results of desegregation remedies may not become evident until program participants have become adults. The strongest impact of these programs may be the way in which they improve the life chances and the occupational status attainment of the victims of discrimination.[67] Based on what research has demonstrated about the ways in which desegregated school environments improve the aspirations, opportunities and accomplishments of minority students,[68] a remedy aimed at removing the vestiges of

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[67]A.S. Wells & R.L. Crain (in press), *op. cit.*

[68]J.H. Braddock, *The Perpetuation of Segregation Across Levels of Education: A Behavioral Assessment of the Contact-Hypothesis*, SOCIOLOGY OF EDUCATION 53:178-86 (1980); J.H. Braddock, SEGREGATED HIGH SCHOOL EXPERIENCES AND BLACK STUDENTS' COLLEGE AND MAJOR FIELD CHOICES (Paper presented at the National Conference on School Desegregation, University of Chicago, 1987); J.H. Braddock, R.L. Crain, J.M. McPartland, & R.L. Dawkins, *Applicant Race and Job Placement Decisions: A National Survey Experiment*, INTERNATIONAL JOURNAL OF SOCIOLOGY AND SOCIAL POLICY 6(1):3-24 (1986); J.H. Braddock & J.M. McPartland, *How minorities continue to be excluded from equal employment opportunities: Research on Labor Market and Institutional Barriers*, JOURNAL OF SOCIAL ISSUES 43(1):5-39 (1987); J.H. Braddock & J.M. McPartland, *Social-Psychological Processes that Perpetuate Racial Segregation: The Relationship Between School and Employment Desegregation*, JOURNAL OF BLACK STUDIES 19(3):267-89 (1989).

a segregated system *without* desegregation is likely to be more difficult and time consuming. Since some of the factors that have proven effective in improving the life chances of minority students in desegregated settings—access to higher-status schools and the social networks associated with them—are not available to students who remain in segregated schools, the positive effects on these students would likely take much longer.

Another reason to be pessimistic about early indications of success of educational remedies is that not only are many of the most positive effects of desegregation long-term, but many are only clear for students experiencing desegregation beginning in the early years of schooling.[69] There is reason to expect that the most positive long-term effects of *Milliken II* remedies might also accrue to students who experience these remedies when they are very young. As indicated earlier, among the most potential potent educational programs for remedying the vestiges and harms of segregation are preschool, kindergarten, and early elementary school programs. However, the ultimate effectiveness of these programs depends upon continued special assistance in later years.[70]

It may be possible, however, to anticipate the achievement of long-term outcomes of educational remedies by examining intermediate indicators. For example, it may be possible to anticipate successful postschool outcomes by identifying positive student career aspirations, behavior, teen sexual activity, delinquency, grades, and dropout outcomes by

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[69]R.L. Crain & R.E. Mahard, *The Effects of Research Methodology on Desegregation Achievement Studies: A Meta-Analysis*, AMERICAN JOURNAL OF SOCIOLOGY 83(5):839-58 (1983).

[70]The Consortium on Longitudinal Studies, 1983, *op. cit.*

midway through high school. A successful *Milliken II* plan might show evidence of a trend toward closing of the gap between actual minority performance on standardized tests of achievement and performance that could be expected in the absence of a history of segregation.

III. CONCLUSION

The social science research indicates that there are a number of educational programs that can make a significant contribution to remedying the vestiges and harms of racial segregation. There is also substantial knowledge of the conditions that are necessary to promote implementation of new programs and changes in institutional and instructional practices. There also exist readily available indicators, measures, and analytical techniques to evaluate the extent to which these programs achieve their intended effects.

The educational remedies that hold the most potential for remedying vestiges and harms of segregation may be expensive and will certainly require long-term commitments of time and resources for their benefits to accrue. The challenges for making these programs work are indeed considerable. One of the most significant vestiges of school segregation is the high concentrations of economic poverty in urban school districts.[71] Research consistently shows that low-income children enrolled in schools with high concentrations of poor students are more likely to have lower achievement test scores than low-income

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[71]D.S. Massey & N.A. Denton, 1993, *op. cit.*; C. Jencks & P.E. Peterson, 1991, *op. cit.*; W.J. Wilson, 1987, *op. cit.*; D. Pearce, 1981, *op. cit.*

children enrolled in schools with fewer poor classmates.[72] When low-income African American students from urban schools are given the opportunity to attend predominantly white middle- and upper-middle income suburban schools, they are less likely to drop out of high school, get into trouble with the police, or have a baby before the age of 18 than low-income African American students who remain in racially isolated, low-income schools.[73] Thus, in addition to the educational challenges associated with racial segregation, *Milliken II* remedies must attend to the educational challenges associated with high poverty concentrations in schools.

The relationship between educational programs and other desegregation efforts to remedy the vestiges and harms of segregation is mutually reinforcing. The effectiveness of desegregation remedies of the 1980s was enhanced in large part by accompanying educational components. Likewise, educational components are more effective when paired with other desegregation remedies. A combination of well-designed, well-conceived, effective educational remedies and desegregation is the most promising way to restore the victims

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[72]U.S. Department of Education, 1993, *op. cit.*; M.M. Kennedy, B.F. Birman & R. Demaline, 1986, *op. cit.*; A.A. Summers & B.L. Wolfe, *Do Schools Make a Difference?* AMERICAN ECONOMIC REVIEW 67:639-52 (1977); V.E. Lee & A.S. Bryk, *A Multilevel Model of the Social Distribution of High School Achievement,* SOCIOLOGY OF EDUCATION 62:172-92 (1989); R.W. Rumberger & J.D. Willms, 1993, *op. cit.;* J.C. Coleman et al., EQUALITY OF EDUCATIONAL OPPORTUNITY (Washington, D.C.: U.S. Government Printing Office, 1966).

[73]R.L. Crain et al., A LONGITUDINAL STUDY OF A METROPOLITAN VOLUNTARY SCHOOL DESEGREGATION PLAN (New York: Columbia University, Teachers College, Institute for Urban and Minority Education, 1991); A.S. Wells & R.L. Crain (in press), *op. cit.*

of discriminatory conduct to the position they would have occupied in the absence of discrimination.[74]

It is crucial that the courts devote sufficient resources and allow sufficient time for remedial programs to be effectively implemented and to achieve their intended outcomes. At the same time, it is incumbent upon the courts to rigorously monitor and evaluate the use of additional resources and the effectiveness of remedial programs. As has been noted in this statement, there are indicators, measures, techniques, and processes that are readily available from social science that can be used to accomplish this task efficiently and to keep the courts from becoming too entangled in the daily operations of schools and school districts.

James D. Anderson
University of Illinois
School of Education
Champaign, Illinois

Lascelles F. Anderson
University of Illinois
Center for Urban Educational Research and Development
Chicago, Illinois

M. Beatriz Arias
Arizona State University
Center for Bilingual Education and Research
Tempe, Arizona

James Blackwell
University of Massachusetts
Professor Emeritus
Boston, Massachusetts

Jomills Henry Braddock, II
University of Miami
Department of Sociology
Coral Gables, Florida

Everett Cataldo
Cleveland State University
Department of Political Science
Cleveland, Ohio

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[74]J. Feldman et al., 1994, *op. cit.*

Kenneth B. Clark
City University of New York
Professor Emeritus
New York, New York

Robert L. Crain
Columbia University
Teachers College
New York, New York

Marvin Dawkins
University of Miami
Department of Sociology
Coral Gables, Florida

Joyce L. Epstein
Johns Hopkins University
Center on Families,
Communities, Schools,
and Children's Learning
Baltimore, Maryland

Reynolds Farley
University of Michigan
Population Studies Center
Ann Arbor, Michigan

Ricardo R. Fernandez
City University of New York
President, Lehman College
Bronx, New York

Gordon Foster
Southeastern Desegregation
Assistance Center
Director
Miami, Florida

John Hope Franklin
Duke University
Department of History
Durham, North Carolina

Adam Gamoran
University of Wisconsin
Department of Sociology
Madison, Wisconsin

Carl A. Grant
University of Wisconsin
Department of Curriculum
and Instruction
Madison, Wisconsin

Bruce R. Hare
Syracuse University
Department of African-
American Studies
and Sociology
Syracuse, New York

Ian M. Harris
University of Wisconsin
Department of Educational
Policy and Community
Studies
Milwaukee, Wisconsin

Larry Hedges
University of Chicago
Chicago, Illinois

Jennifer L. Hochschild
Princeton University
Woodrow Wilson School of
Public and International
Affairs
Princeton, New Jersey

Joseph Kahne
University of Illinois
College of Education
Chicago, Illinois

Kofi Lomotey
Louisiana State University
Department of Administrative
and Foundational Services
Baton Rouge, Louisiana

James M. McPartland
Johns Hopkins University
Center for the Social
Organization of Schools
Baltimore, Maryland

Mary Haywood Metz
University of Wisconsin
Department of Educational
Policy Studies
Madison, Wisconsin

Thomas K. Minter
City University of New York
Dean of Division Education,
Lehman College, Retired
Riverdale, New York

Gary Natriello
Columbia University
Teachers College
New York, New York

George W. Noblit
University of North Carolina
School of Education
Chapel Hill, North Carolina

Larry P. Nucci
University of Illinois
College of Education
Chicago, Illinois

Jeannie Oakes
University of California
Los Angeles, California

John Ogbu
University of California
Department of Anthropology
Berkeley, California

Gary A. Orfield
Harvard University
Graduate School of Education
Cambridge, Massachusetts

Thomas F. Pettigrew
University of California
Stevenson College
Santa Cruz, California

Mary Anne Raywid
Hofstra University
Department of Administration
and Policy Studies
Hempstead, New York

James R. Rosenbaum
Northwestern University
Center for Urban Affairs
and Policy Research
Evanston, Illinois

Juliet Saltman
Kent State University
Professor Emerita
Kent, Ohio

Julian Samora
Notre Dame University
Professor Emeritus
Notre Dame, Indiana

Robert Slavin
Johns Hopkins University
Center for Research on
Effective Schooling for
Disadvantaged Students
Baltimore, Maryland

M. Brewster Smith
University of California
Professor Emeritus
Santa Cruz, California

Mark A. Smylie
University of Illinois
School of Education
Chicago, Illinois

Margaret Beale Spencer
University of Pennsylvania
Graduate School of Education
Philadelphia, Pennsylvania

Alma F. Taeuber
University of Wisconsin
Department of Sociology
Madison, Wisconsin

Karl Taeuber
University of Wisconsin
Center for Demography &
Ecology
Madison, Wisconsin

Marylee C. Taylor
Pennsylvania State University
Department of Sociology
University Park, Pennsylvania

William Trent
University of Illinois
School of Education
Champaign, Illinois

Henry T. Trueba
University of Houston
Senior Vice President for
Academic Affairs and
Provost
Houston, Texas

Oscar Uribe, Jr.
National Education
Association
Program Manager
Washington, D.C.

William Velez
University of Wisconsin
Department of Sociology
Milwaukee, Wisconsin

Meyer Weinberg
University of Massachusetts
Professor Emeritus
Amherst, Massachusetts

Amy Stuart Wells
Graduate School of Education
and Information Studies
University of California
Los Angeles, California

William Julius Wilson
The University of Chicago
Center for the Study of Urban
Inequity
Chicago, Illinois

J. Milton Yinger
Oberlin College
Professor Emeritus
Oberlin, Ohio

John Yinger
Syracuse University
Maxwell School of Citizenship
and Public Affairs
Syracuse, New York

Constance M. Yowell
University of Illinois
College of Education
Chicago, Illinois